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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,722	08/13/2003	Hung-Jen Wei	ACMP0068USA	1721

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NAIPO (NORTH AMERICA INTERNATIONAL PATENT OFFICE)  
P.O. BOX 506  
MERRIFIELD, VA 22116

EXAMINER
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BLACKMAN, ROCHELLE ANN J

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 04/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/604,722

**Applicant(s)**

WEI ET AL.

**Examiner**

Rochelle Blackman

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*an*

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/29/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

The disclosure is objected to because of the following informalities: In paragraph [0002], line 2, there should be a space between "an" and "invisible-light", in paragraph [0004], line 2, there should be a space between "devices" and "include". In paragraph [0006], line 13, there should be a space between "wheel" and "20". In paragraph [0024], line 8; paragraph [0026], line 3 and 7; paragraph [0027], line 2; paragraph [0028], line 5 and 9; paragraph [0031], line 4 and 11; and paragraph [0033], line 2, "#" should be - -θ- -. In paragraph [0025], line 1, "he" should be - -the- - and lines 5-6, there should be a period after "blocked", "the" should - -The- -, and the phrase, "and the invisible-light reflector 38" should be omitted.

Appropriate correction is required.

### ***Claim Objections***

Claims 2-8 and 10-14 are objected to because of the following informalities: In claims 2, 3, and 8, first line, there should be a comma after "1". In claim 4, line 1, there should be a space between "3" and "wherein" and a comma after "3". In claim 5, line 1, there should be a comma after "1". In claim 6, line 1, there should be a space between "1" and "wherein" and a comma after "1". In claim 7, line 1, there should be a space between "6" and "wherein" and a comma after "6". In claims, 10, 12, and 14, line 1, there should be a comma after "9". In claim 11, line 1, there should be a space between

"10" and "wherein" and a comma after "10". In claim 13, line 1, there should be a space between "9" and "wherein" and a comma after "9".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 8, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogino, U.S. Patent No. 5,808,506.

Regarding claims 1-5 and 8, Ogino discloses an "image projection system"(see FIGS. 4 and 5) comprising: a "light source for generating a light beam"(see 21 of FIG. 4 and 5); a "reflective housing comprising an opening, the reflective housing forming an accommodating space, the light source installed inside the accommodating space so that the light beam generated by the light source substantially propagates along an optical path through the opening away from the accommodating space"(see 26 of FIG. 5); and an "invisible-light reflector installed at a reflecting position intersecting with the optical path outside the opening of the reflective housing, a normal of the invisible-light reflector and the optical path intersecting to form a predetermined angle so that invisible light of the light beam emitted from the opening will be reflected back into the accommodating space"(see 27 of FIG. 5 and col. 6, lines 46-52); "wherein the reflective

housing is an elliptic reflective housing, and the light source is installed at a focal point of the elliptic reflective housing, and the optical path is a major axis of the elliptic reflective housing”(see “reflective housing” 26 relative to optical axis in FIG. 5); “wherein the predetermined angle formed by the normal of the invisible-light reflector and the optical path is an acute angle not equal to zero degree, so that infrared rays of the light beam reflected back into the accommodating space by the invisible-light reflector will not focus on the reflective housing”(see “invisible-light reflector” 27 relative to optical axis in FIG. 5); “wherein the image projection system further comprising a light tube connected to the light source, wherein the infrared rays of the light beam reflected back into the accommodating space by the invisible-light reflector will not focus on the light tube”(see 21 of FIGS. 4 and 5); “wherein the acute angle is smaller than 45 degrees”(see “invisible-light reflector” 27 relative to optical axis in FIG. 5); and “wherein the reflective housing is a parabolic reflective housing, and the optical path is a parallel route by which the light beam propagates after being reflected by the parabolic reflective housing”(see “reflective housing” 26 and optical axis in FIG. 4).

Regarding claims 15 and 16, Ogino discloses an “image projection system”(see FIGS. 4 and 5) comprising: a “light source for generating a light beam”(see 21 of FIGS. 4 and 5); a “parabolic reflective housing comprising an opening, the parabolic reflective housing forming an accommodating space, the light source installed inside the accommodating space so that the light beam generated by the light source substantially propagates along an optical path through the opening away from the accommodating space”(see 226 of FIG. 5); and a “invisible-light reflector installed at a reflecting position

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intersecting the optical path outside the opening of the reflective housing, a normal of the invisible-light reflector and the optical path intersecting to form a predetermined angle so that invisible light of the light beam emitted from the opening will be reflected back into the accommodating space, and then the invisible light will focus on a predetermined heat-dissipation position away from the focal point”(see 27 of FIG. 5 and col. 6, lines 46-52); and “wherein the invisible-light reflector can be used to reflect infrared rays or ultraviolet rays of the light beam”(see “invisible-light reflector” 27 in FIG. 5 and col. 6, lines 46-52).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogino, U.S. Patent No. 5,808,506 as applied to claim 1 above, and further in view of Childers et al., U.S. Patent Application Publication No. 2003/0184718.

Ogino discloses the claimed invention including an “image module” that is a “liquid crystal panel”(see 3 of FIG. 4). However, Ogino does not appear to disclose an image module comprising a “plurality of controllable optical reflectors” for modulating the light beam.

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Childers discloses a display system 10 for enhancing the quality of an image on a screen comprising a spatial light modulator (SLM) 30 that may be any suitable light-modulating device, such as a micromirror array (e.g., a digital micromirror device (DMD) or a digital light processor) (see FIG. 1, pg. 1, paragraph [0003], and pg. 2, paragraph [0021]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the "image projection system" of the Ogino reference with a micromirror array, as taught by Childers in order to enhance the quality of an image on a screen in the "image projection device".

2. Claims 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogino, U.S. Patent No. 5,808,506 as applied to claim 1 above, and further in view of Childers et al., U.S. Patent Application Publication No. 2003/0184718.

Ogino discloses an "image projection system"(see FIGS. 4 and 5) comprising: a "light source for generating a light beam"(see 21 of FIG. 4 and 5); an "elliptic reflective housing comprising an opening, the reflective housing forming an accommodating space, the light source installed inside the accommodating space so that the light beam generated by the light source substantially propagates along a major axis of the elliptic reflective housing through the opening away from the accommodating space"(see 26 of FIG. 5); an "image module...for modulating the light beam to generate a projecting beam containing an optical image"(see 3 of FIG. 4); and an "invisible-light reflector installed between the reflective housing opening and the image module and at a reflecting position at which the invisible-light reflector intersects the major axis of the

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elliptic reflective housing, a normal of the invisible-light reflector and the major axis intersecting to form a predetermined angle so that invisible light of the light beam emitted from the opening will be reflected back into the accommodating space”(see 27 of FIG. 5 and col. 6, lines 46-52); “wherein the predetermined angle formed by the normal of the invisible-light reflector and the major axis is an acute angle not equal to zero degree, so that infrared rays of the light beam reflected back into the accommodating space by the invisible-light reflector will not focus on the elliptic reflective housing”(see “invisible-light reflector” 27 relative to optical axis in FIG. 5); “wherein the image projection system further comprising a light tube connected to the light source, wherein the infrared rays of the light beam reflected back into the accommodating space by the invisible-light reflector will not focus on the light tube”(see 21 of FIGS. 4 and 5); “wherein the acute angle is smaller than 45 degrees”(see “invisible-light reflector” 27 relative to optical axis in FIG. 5); “wherein the image module is a digital micro-mirror device or a liquid crystal panel”(see 3 of FIG. 4); and “wherein the light source, the reflective housing, and the invisible-light reflector form an integral structure”(see “light source” 21, “reflective housing” 26, and “invisible-light reflector” 27 in FIG. 4).

Ogino does not appear to disclose an image module comprising a “plurality of controllable optical reflectors” for modulating the light beam.

Childers discloses a display system 10 for enhancing the quality of an image on a screen comprising a spatial light modulator (SLM) 30 that may be any suitable light-modulating device, such as a micromirror array (e.g., a digital micromirror device (DMD)



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or a digital light processor) (see FIG. 1, pg. 1, paragraph [0003], and pg. 2, paragraph [0021]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the "image projection system" of the Ogino reference with a micromirror array, as taught by Childers in order to enhance the quality of an image on the screen of the "image projection device".

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell Adams can be reached on (571) 272-2851. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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